

U.S.S.N. 09/201,072-1102
Filed: November 30, 1998
Group Art Unit: 3739
Examiner: D. Shay
Attorney Docket No. 101327-125

REMARKS

The following remarks are presented in response to the Office Action dated March 25, 2002. A second Request for Continued Examination is submitted herewith. Reconsideration and allowance are respectfully requested.

Informalities

The Office Action of March 25, 2002 rejects the pending claims under 35 U.S.C. 112, second paragraph, as failing to recite further structure in the statements that describe Applicant's fiber as being "suitable for coupling" to various lasers and "suitable for conducting radiation." Applicant respectfully disagrees but has amended the claims to delete the word "suitable" in both instances.

Terminal Disclaimer

In response to the rejection of the claims in the March 25, 2002 Office Action on obviousness-type double patenting grounds, in light of related U.S. Patent No. 6,159,203, Applicant submits herewith a revised Terminal Disclaimer, as proposed by the Examiner, disclaiming the terminal part of any patent granted on the above-identified application, which would extend beyond the expiration date of the full statutory term of commonly owned United States Patent No. 6,159,203. The disclaimer has been revised to state that the owner has a 100 percent interest in both the present application and Patent No. 6,159,203.

Prior Art Rejections

The claims also stand rejected under 35 U.S.C. 103(a) as obvious in light of U.S. Patent No. 4,672,969 (Dew) in combination with U.S. Patent No. 4,822,136 (Hicks, Jr.). Applicant again respectfully disagrees.

As previously noted, the Dew reference is actually compelling evidence of the inventiveness of the present invention, and instructive with regard to the state of the art at the time the Applicant's invention was made. Dew sought to minimize water/blood absorption of radiation in a protein denaturing process. Instead of relying on a conventional Nd:YAG laser source (operating in its predominant mode at 1.06 micrometers), he chose a secondary emission wavelength of Nd:YAG lasers (at 1.32 micrometers) and more generally suggested the use of radiation in the range of 1.2 to 1.4 micrometers. Dew's selection of 1.4 micrometers as his upper cut-off point underscores the conventional thinking of those working in the field of phototherapy that wavelengths above 1.4 could not be utilized because of the high losses of fibers at such wavelengths.

Moreover, the Dew reference would provide no motivation to go looking for a way to transmit radiation in this wavelength range, because water absorption actually *increases* above 1.4 micrometers. (See Fig. 2 of the present application.) Hence, Dew's method of denaturing proteins would have encountered the same problems above 1.4 micrometers as the reference identified with radiation at 1.06 micrometers.

The Hicks, Jr. reference does not complement the teachings of Dew. Hicks, Jr. teaches the addition of fluorine to optical fibers for use in telecommunications as a way to reduce hydroxyl ion content and improve signal transmissions at 1.32 micrometers. Hicks, Jr. is neither concerned with medical applications of laser energy, nor the wavelength range of 1.4 to 2.2 micrometers recited in Applicant's claims.

The Office Action of March 25, 2002 suggests that the above arguments are not persuasive because (a) medical lasers are expensive and (b) high medical power lasers are particularly prone to fiber failure. Presumably, the Examiner is suggesting that economic factors would motivate one skilled in the art to combine two unrelated references. Such an analysis

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would eviscerate the "motivation" requirement for obviousness. The motivation must be found in the references themselves, not in the economic value of Applicant's invention. There must be a "nexus" between the references.

Applicant presents the following additional points in rebuttal:

(1) The pending claims are directed to *surgical* systems. The Hicks reference is not at all concerned with surgical applications of laser energy. (In this regard, applicant has amended his principal claim to specify "an elongate *surgical* instrument.") Despite the Examiner's assertions of economic motivation, neither reference teaches or suggests a need for better fibers for surgical usage.

(2) Neither reference teaches any application of optical fibers for transmission of laser radiation in Applicant's claimed range (of 1.4 to 2.2 micrometers). Hence, even if the references were combined, the result would be a protein denaturing apparatus operating at 1.32 micrometers, not the claimed invention.

Conclusion

For all the reasons above, reconsideration and allowance are requested.

A second Request for Continued Examination is also submitted along with the required fee. In the event that any additional fees are required, please charge Deposit Account No. 141449.

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In the event that this Amendment is not deemed sufficient to place this case in condition for allowance, Applicant's representative *again* requests an opportunity to conduct an interview with the Examiner prior to the issuance of another Office Action. In order to expedite prosecution, the Examiner is urged to telephone the undersigned Attorney for Applicant at the telephone number indicated below, once this response has been received, if there are any remaining issues.

Respectfully submitted,

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APPENDIX A
Marked-Up Claim Revisions

44. (Amended) A surgical system comprising:

a hollow elongate surgical instrument, having at least one lumen [suitable] for receiving an optical fiber, and being maneuverable to provide a conduit for transmission of laser energy to a surgical site; and

a flexible, elongate fiber for conducting laser energy from a proximal end of said fiber to a surgical site at a distal end of said fiber, the proximal end [suitable] for receiving laser energy, and said fiber being a silica fiber having a low hydroxyl ion content to reduce absorption of laser energy at a wavelength of about 1.4-2.2 micrometers.

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